Just a few Anticipated Cost Benefits of FOQA

Presented by

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Background

- Flight Operations Quality Assurance (FOQA) is the routine down-loading and systematic analysis of the of digital flight-recorded data. The European Community have enjoyed the monetary benefits from this process of analysis for the last 30 years. There is some interest by U.S. air carriers participating in an FAA approved FOQA program.

Savings: Training Costs

- An airline involved in a partnership with the FAA can evaluate the performance of pilot training and on-the-line performance.
- As a result of a favorable performance the FAA may accept a proposal to an extention to the AQP Single Visit Training (SVT) cycle.
- In other words, rather that a 12 month cycle it may be possible to run a 13 month or 14 month cycle.

A saving would be realized using the following formula:

- **Total number of pilots/12(months in a year)*number of training days each pilot receives*number of hours pilot is paid*pilot hourly wage=Total.**
- **Add in hours of simulator usage per crew*simulator upkeep cost.**

Example:

- 1100 total pilots/12=90 pilots trained per month. Each pilot receives 5 days of recurrent training. 5*90=450. Each pilot receives 4 hours pay per day of training. 450*4=1800. Capt. Pay=$145, F/O pay=95. 90 pilots, half Capt. and half F/O. 900*$145=$130500, 900*$95=$85500. $130500+$85500=$216000. Each crew receives 12 hours in simulator. Assume simulator time costs $160 per hour. 45*12=540. 540*$160=$86400. Sum total=$130500+$85500+$86400 = $302,400.

Savings: Aircraft Maintenance

- An airlines ability to verify engine over temperatures.
- After ten over temperatures of unknown cause, an engine must be removed and inspected.
- If the data indicates why an over temperature occurred or did not actually happen, the time until engine removal and inspection is extended.

Assume the following:

- **The cost of removing and inspecting an engine can run anywhere between $70,000 and $300,000.**
- **The cost of not having that aircraft available for daily revenue, $30,000.**
- **Using average figures, the following projections can be made: After the initial aircraft delivery "Honeymoon Period", an airline can expect a savings of one engine overhaul every 7 years.**

A saving would be realized using the following formula:

- **Engine removal factor*average cost of engine removal*aircraft out of service=Total**
- **Example: 1/7=.14 Engine Removal Factor. $300,000-$70,000=$230,000/2=$115,000 +$70,000=$185,000 Average Engine Removal Cost. Assume 2 days to remove and install an engine. 2 days*$30,000 aircraft out of revenue service=$60,000. $185,000+$60,000=$245,000*.14=$34,300**

Savings: Brake Wear

- **Assume: Through an awareness program to the pilots, an airline can monitor and reduce brake wear. It is reasonable to expect to reduce brake changes by a factor of 1% per year on the entire aircraft fleet.**

A saving would be realized using the following formula:

- **Number of annual flights/number of cycles before brake removal and overhaul*cost to overhaul brakes*percentage expected to reduce brake changes=Total**

Example:

- Average number of flights per day=430. 430*365=156950 flights annually. Current brake change rate = 790. Cost to change and overhaul brakes=$5000. 156950/790=198 brake changes annually. 198*$5000=$990,000*1%=$99,000.

Savings: Fuel Burn

- **Airlines can develop a program which will fine tune their FOQA aircraft fuel.**

A saving would be realized using the following formula:

- **Total fuel burn annually in gallons*price of fuel*expected fuel savings=Total**

Example 1:

- **Total fuel burn for year= 275,222,000lbs /6.7= 41077910gal *.65cents =$26,700,641 *1% = $267,006**

Example 2:

- **Total yearly hours on aircraft*reduction in fuel burn(documented or assumed) =Sum in lbs/6.7=Total fuel saved in gals*Fuel Price=Total Saved (per aircraft per year)**
- **Assume aircraft utilization is 3650 hours per year per aircraft.**
- **3650*300lbs=1,095,000lbs/6.7=163,433gal*.65cents = $106,231**

Tracking Flight Performance

- An airline seeking approval for ops specs regarding GPS/RNP navigation.
- It is anticipated that the FAA will lower an airlines approach minimums, based on demonstrated performance of our aircraft and flight crews, using FOQA information. It is reasonable to assume the RNP/GPS approach minimums will be lowered, which would enable greater customer service and schedule reliability resulting in higher profits.

FAA Oversight (ATOS)

- The FAA has recently instituted the Air Transport Oversight System (ATOS) for 10 major airlines. This new approach to how an air carrier assures regulatory compliance and resolution of safety concerns is revolutionary in that it relies on geographical inspectors to monitor airlines. The FAA has stated that airlines with FOQA programs will require less oversight due to the FAA's confidence that those airlines have a better concept of their day to day flight operations.

What we haven't Discussed...

- **Enhanced Monitoring of Flight Performance and Flight Training SOPs;**
- **Better individual leg evaluation;**
- **Evaluation of Air Traffic Control procedures;**
- **Evaluation of Aircraft and Airport Design and Maintenance;**
- **Monitoring of Meteorological Conditions.**

We're only limited by our:

Imagination